

WINTER COVER HEIGHT AND HEAT LOSS: IS TALLER BETTER?

Eliodora Chamberlain

Department of Fisheries and Wildlife Sciences, 302 Anheuser-Busch Natural Resources Building, University of Missouri, Columbia, Missouri 65211-7240, USA

Ronald D. Drobney

U.S. Geological Survey, Missouri Cooperative Fish and Wildlife Research Unit, 302 Anheuser-Busch Natural Resources Building, University of Missouri, Columbia, Missouri 65211-7240, USA

Thomas V. Dailey

Missouri Department of Conservation, 1110 South College Avenue, Columbia, Missouri 65201, USA

ABSTRACT

Previous studies have demonstrated that roost site selection affects energy requirements for thermoregulation in several avian species; however, the influence of microhabitat characteristics on heat loss has not been evaluated for northern bobwhites (*Colinus virginianus*). One frequently measured microhabitat feature that is commonly thought to influence the thermal characteristics of avian ground roost sites is cover height. We simultaneously measured thermoregulatory energy expenditure of bobwhites across a range of low ambient temperatures (-24° to 14° C) in 3 cover heights (0 cm, 46 cm, 124 cm) using 3 heated taxidermic mounts. Predicted metabolic rates (PMR) were derived on the basis of power consumption of the taxidermic mounts. Predicted metabolic rate for each vegetation height was linearly related to ambient temperature, and decreased significantly ($P < 0.05$) as temperature increased. Contrary to our predictions, PMR did not differ ($P = 0.769$) among the 3 vegetation heights across a range of environmental conditions. These findings suggest that under the conditions occurring during our field measurements, thermoregulatory energy requirements of bobwhites are essentially independent of vegetation height at the roost, and primarily are a function of conductive rather than convective heat loss.

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